

Biology Long-Term Plan

Long-term planning (LTPs) - Planning how the key concepts, knowledge, skills identified in the Progression map will be delivered termly per year group

Ensuring that end points & NC/spec are covered

Identifying what assessments are planned and when

Ensuring whole school intent priorities to be planned for

(Year 11 Combined science)						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit title:	B10 Nervous system	B11 Hormonal Coordination / Revise for trial exams	B12 Homeostasis / B13 Reproduction	B14 Variation and Evolution / Mock exam	B15 Genetics / Revise & Exams	Exams
Unit length:	10 lessons	9/ 4 lessons	5/6 lessons	4 lessons	4 lessons	
Key concepts:	Nervous system, reflex arcs, the brain, the eye	Hormonal control, diabetes, negative feedback, the menstrual cycle	Controlling temperature and water balance, the kidney. Asexual and sexual reproduction. DNA structure, gene expression, genetic crosses, genetic diseases.	Evolution by natural selection, selective breeding, genetic engineering.	Theories and evidence for evolution, speciation	
Knowledge/ Skills:	Recall details of the human nervous system and its structure and function. Describe a reflex arc, with detail of synaptic transmission. Investigating the brain and the treatment of brain damage. the structure and function of the human eye and the process of accommodation. Describe common defects of the eye including myopia, hyperopia, and the role of new technology in the treatment of these conditions.	Identify the main parts of the endocrine system. Recall how blood-glucose concentration is controlled, including the role of insulin and glucagon. Be aware of the causes and treatments of both type 1 and type 2 diabetes. Understand the process of negative feedback. Recall the action of hormones in bringing about puberty and the role of oestrogen in the menstrual cycle in females.	Recall the role of the thermoregulatory centre in the brain. Water, ions, and urea are lost from the skin in an uncontrolled way. Recall that the digestion of proteins may result in excess amino acids, which are deaminated in the liver. Understand the role and functions of the human kidney, including treatments for kidney failure. Outline asexual and sexual reproduction, and the importance of meiosis,	Discuss the causes of variation in terms of genetic, environmental, or a combination of both. Understand the role of mutation in variation, understand the theory of evolution by survival of the fittest and natural selection, and be able to give examples. Recall the process of selective breeding and the steps involved in the process of genetic engineering.	Describe several theories of evolution including the work of Lamarck and Darwin, understand speciation and be aware of evidence for evolution, including the fossil record and reasons for extinction. Understand how living organisms are classified and give the rules of the binomial system of naming living things. Be familiar with the three-domain system	

		Understand how hormones are used in the control of fertility as applied to contraception, and for infertility treatments. The role of hormones in plants, and the tropism responses they cause.	fertilisation, and variation in sexual reproduction.. Outline DNA structure, recalling protein synthesis, including how the genetic code is used to assemble amino acids into proteins. Be able to use genetic terms and set out a genetic cross with the use of a Punnett square. Predict ratios of different phenotypes, and apply this to sex determination and family trees/ be able to describe the inheritance of genetic disorders. Discuss screening for genetic disorders.			
End points covered:	A deep understanding of how organisms sense and respond and the muscular system.	A deep understanding of reproduction and how organisms sense and respond	A deep understanding of how organisms sense and respond and Chromosomes, DNA and genes.	A deep understanding of inheritance and evolution	A deep understanding of inheritance and evolution	
NC/Spec coverage:	4.5.2	4.5.3 /	4.5.2/4.5.3	4.6.1/4.6.2/4.6.3	4.6.2/4.6.3	
Cross-curricular links:		RE / PSHE. Contraception, the menstrual cycle	RE organ donation		RE / History Acceptance of the theory of Evolution	
Assessments:	EoU tests PRs MOCKs GCSE exams	EoU tests PRs MOCKs GCSE exams	EoU tests PRs MOCKs GCSE exams	EoU tests PRs MOCKs GCSE exams	GCSE exams	GCSE exams
Other school intent priorities						
New experiences – broadening horizons	Aspire session, Biology of Sport	Demonstrate contraception	Ethics of organ donation / organ harvesting	Evaluate use of genetically modified organisms and selectively bred organisms		

Developing character – <i>Kind, Hard Working, Successful</i>						
Context specific need – diversity, inclusion; reading, literacy; mental health						
Curriculum Careers - Gatsby 4	doctor, radiographer	Doctor, counsellor, agriculture	Geneticist			